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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,202	09/02/2003	Yo Yanagida	06753.0562	1710
22852	7590	02/08/2007		
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER LEE, BENJAMIN C	
			ART UNIT	PAPER NUMBER
			2612	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/652,202	Applicant(s) YANAGIDA ET AL.	
	Examiner Benjamin C. Lee	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Claim Status

1. Amended claims 1-10 are pending.

Claim Rejections - 35 USC § 103

2. Amended claims 1-3 and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al. (US pat. #6,842,108) in view of Kudo Hiroyuki (JP8-98277).

1) Regarding amended claim 1:

Akiyama et al. discloses a power line communication device for a vehicle, comprising: an internal electronic control unit (8) connected to a connection point on a direct-current power line (5), the internal electronic control unit (8) communicating with an external electronic control unit (7, 9) by a communication signal superimposed on a direct-current supply voltage applied to the direct-current power line (col. 4, lines 7-22); and an impedance element (11 of Fig. 2) configured to conduct a direct current, wherein the impedance element has a higher impedance against a current component other a direct current component (filter 11 according to col. 5, lines 30-35 “filters” or impedes/blocks communication signal frequency current components, i.e. other than a direct component, while allowing or asserting lower impedance against the power supply voltage/current, which in this case of vehicle powerline power supply is direct current component).

Door ECU 9 of Akiyama et al. is for receiving communication signals over the vehicle power line 5 to control an External Load in the form of the door locking/unlocking actuator (col. 5, lines 5-14) and receiving low-pass filtered (11) and regulated (13) power for powering the ECU 9 including “other parts not shown in ECU 9” in Fig. 2 (Fig. 2 and col. 5, lines 5-50) that is

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inherently in proximity of the door lock/unlock actuator and door lock/unlock mechanism without explicitly specifying that the filtered/regulated power also powers the nearby door lock/unlock actuator and mechanism, whereby Fig. 2 shows the DC power output of filtered and regulated power after 11 and 13 to feed not only the micro-controller 9b that controls the lock/unlock actuator, but also an additional branch labeled "to IC" with unspecified destinations, and whereby although not shown in Fig. 2, the micro-controller 9b outputs a command signal to the door lock/unlock actuator to actuate the lock/unlock functions of the lock/unlock mechanism (external load) according to the disclosure.

Hiroyuki explicitly teaches the specific known use of a load control by signal-over-powerline arrangement in which the filtered (12) power from the power line (1) powers the controlled load (4).

In view of the teachings by Akiyama et al. and Hiroyuki, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to provide DC power to the door lock/unlock external load from the vehicle power line 5 after LPF 11/regulator 13 in Fig. 2 in Akiyama et al. in view of the explicit teaching of Hiroyuki so that a separate vehicle power cable 5 is not required to power such external load. Furthermore, the lock/unlock ACTUATOR in Akiyama et al. constitutes the claimed load control part provided between the impedance element and the external load being controlled by receiving control signals from the internal electronic control unit to switch on/off the direct current (that occurs when turning on/off the lock/unlock actuator). As such, the impedance element 11 would be inserted between the connection point and the external load (see Fig. 1 of Hiroyuki).

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2) Regarding claims 2-3 and 5-8, Akiyama et al. and Hiroyuki render obvious all of the claimed subject matter as in claim 1, including:

--the claimed the impedance element comprises a coil connected in parallel with a capacitor (L1, C4 of Hiroyuki in Fig. 1); the claimed wherein the impedance element is configured to have higher impedance against non-direct current than against direct current (L1 in Fig. 1 of Hiroyuki); wherein the impedance element consists essentially of one or more coils connected in series between the connection point and the external load (L1 in Fig. 1 of Hiroyuki), and additionally with one ore more capacitors connected in parallel with the coils (C4 in Fig. 1 of Hiroyuki), whereby the capacitors are grounded (C4 in Fig. 1 of Hiroyuki shown connected to ground electrode of power line 1).

While Akiyama et al. teaches integrating the components in Fig. 2 onto an IC 9a for compact housing in a vehicle environment in such a way that an active filter using operational amplifier is used instead of an inductance element to implement Low Pass Filter 11 (col. 7, lines 44-48 and col. 2, lines 4-12), it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that application environments such as door locking/unlocking and control mechanisms which is usually in the vehicle door does not require such stringent compact housing restrictions as to necessitate integration on a IC in Akiyama et al., so that a known inductance element implemented filter as taught by Hiroyauki can be used as an alternative.

3) Regarding claim 9, Akiyama et al. and Hiroyuki render obvious all of the claimed subject matter as in claim 1, including:

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--the claimed wherein the impedance element is further connected in series with an external power line communication device (filtered 11 and regulated power 13 feeding the external communication device in Fig. 2 of Akiyama et al.).

4) Regarding claim 10, Akiyama et al. and Hiroyuki render obvious all of the claimed subject matter as in claim 1, wherein:

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that the door lock/unlock actuator (load control part) in Akiyama et al. and Hiroyuki includes switching devices, e.g. switching on/off, or actuating/deactuating, the door lock/unlock mechanism.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al. (US pat. #6,842,108) in view of Kudo Hiroyuki and Buda (US pat. #6,549,120).

1) Regarding claim 4, Akiyama et al. and Hiroyuki render obvious all of the claimed subject matter as in claim 1:

While Akiyama et al. discloses using Frequency Hopping modulation onto the DC vehicle power line for communication and not the claimed amplitude-shift-key modulation (ASK), it has been well known that various modulation methods can be used on a power line to communication purposes, as long as the communication signals can be distinguished or supposed and extracted from the power line, and de Buda is one such example (col. 2, line 13 and col. 11, lines 30-33).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use ASK as shown by de Buda in a vehicle DC-power line communication system such as taught by Akiyama et al. and Hiroyuki as an alternative choice based on various factors

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such as preference or compliance with existing system components or equipment without unexpected results.

Response to Arguments

4. Applicant's arguments filed 11/15/06 have been fully considered but they are not persuasive.

1) The above rejection has been elaborated in more detail in response to Applicant's amendment, which would answer some of Applicant's arguments. See above rejection for detail. Specifically, in Akiyama, ECU 9 constitutes the claimed "external" ECU, while ECU 7/8 constitute the claimed "internal" ECU. As further specified in the above rejection, output of LPF 11/regulator 13 provides one output for powering the ECU 9 circuitry as shown in Fig. 2, and another output labeled "to IC" in Fig. 2 to unspecified destinations, while the specification on col. 5, lines 48-50 indicates "other parts not shown in ECU 9". As indicated in the above rejection, Akiyama suggests, but does not explicitly disclose, the claimed feature of the filtered power powering the external load in addition to the ECU 9, but since ECU 9 is inherently in close proximity to the external load (door lock/unlock mechanism), in view of the known explicit teaching from Kudo Hiroyuki that shows the known powering of the external load using filtered power in a powerline communication system, the obvious combination meets the claimed invention, the motivation for combining being to reduce the number of powerline cables in the vehicle environment as indicated in the rejection.

2) The door lock/unlock mechanism in Akiyama constitutes the claimed external load; the lock/unlock actuator constitutes the claimed load control part, as indicated in the above rejection.

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3) Kudo Hiroyuki was relied upon for its teaching of using the filtered power in a powerline communication system to power a nearby load, and one skilled in the art would have readily recognized that such teaching is applicable as suggestion for modification of other systems including Akiyama regardless of the specific type of powerline environment.

4) In conclusion, the combined prior art renders all of the claimed subject matter obvious. Applicant's arguments are not deemed persuasive in overcoming the rejection, and the rejection is maintained.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

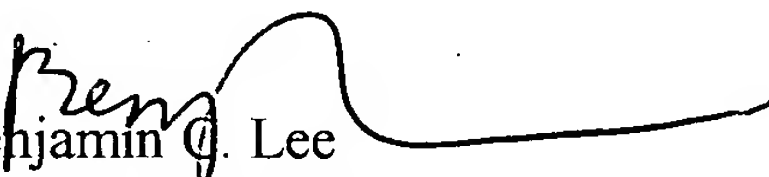
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (571) 272-2963. The examiner can normally be reached on Mon -Fri 11:00Am-7:30Pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Benjamin Q. Lee
Primary Examiner
Art Unit 2632

B.L.